

REMARKS

Reconsideration and withdrawal of the claim rejections are requested in view of the amendments and remarks herein.

I. STATUS OF CLAIMS AND FORMAL MATTERS

Claims 1-5, 8-12 and 14-16 are pending in this application. Claims 1, 8, 12, and 14-16 are amended; claims 6, 7, 13 and 17-27 are cancelled. The amendments place the claims in better form, and do not affect the scope. No new matter is added.

It is submitted that the claims, herewith and as originally presented, are patentably distinct over the prior art cited by the Examiner, and that these claims are and were in full compliance with the requirements of 35 U.S.C. §112. The amendments of the claims, as presented herein, are not made for purposes of patentability within the meaning of 35 U.S.C. §§§ 101, 102, 103 or 112. Rather, these amendments are made simply for clarification and to round out the scope of protection to which Applicants are entitled. Furthermore, it is explicitly stated that the herewith amendments should not give rise to any estoppel, as the herewith amendments are not narrowing amendments.

II. THE REJECTIONS UNDER 35 U.S.C. §112, 2ND PARAGRAPH ARE OVERCOME

Claims 1-6, 8-12, 14-16 and 27 were rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite. The rejections are traversed.

The Office Action objected to the phrase “under stringent conditions” in claims 1, 6 and 27. Claims 6 and 27 have been cancelled, and claim 1 no longer recites the phrase, thereby overcoming the rejection on this basis.

The phrase “wherein a cosuppression effect is achieved” in claim 10 has been deemed indefinite. It is submitted that “cosuppression” is a standard term whose meaning is well known in the transgenic plant art. As evidence of this assertion, the Examiner’s attention is drawn to the several review articles on cosuppression in plants (Jorgensen, *Trends Biotechnol.* 8:340-4; 1990; Flavell *et al.*, *Curr. Top. Microbiol. Immunol.* 197:43-56; 1995; Smyth, *Curr. Biol.* 7:R793-5; 1997), published before the earliest priority date of this application, that were enclosed with the Amendment filed on December 22, 2003. Note that Jorgensen and Flavell *et al.* are cited on page 15, lines 1-3, of the specification. Cosuppression is not “obtained from two different regulatory elements or from regulatory elements and other source”, as suggested by the Office Action. Rather, it occurs in a cell when the presence of one gene (such as SEQ ID NO:1)

suppresses the activity of an endogenous, related gene (such as native wheat starch synthase). This effect is well known and understood in the art, as is demonstrated by the review articles. See, in particular, the last paragraph on page 340 of Jorgensen, the paragraph bridging pages 43 and 44 of Flavell *et al.* and the second paragraph of Smyth, all of which demonstrate a common understanding of the meaning of the term cosuppression, as it is used in the art. Therefore, the term "cosuppression" is not indefinite, and would not be so interpreted by the skilled artisan.

Reconsideration and withdrawal of the rejections under §112, second paragraph, are requested.

III. THE REJECTIONS UNDER 35 U.S.C. §112, 1ST PARAGRAPH ARE OVERCOME

Claims 1-6, 8-12, 14-16 and 27 were rejected under 35 U.S.C. §112, first paragraph, as allegedly lacking adequate written description and enablement. The Office Action alleges that nucleic acid molecules that hybridize to SEQ ID NO:1 under stringent conditions are not adequately described or enabled by the specification. Applicants disagree; however, in order to expedite prosecution, hybridization language is no longer recited in claim 1 and claim 27 has been cancelled, obviating the rejections.

It is submitted that the claims are in compliance with the first paragraph of §112, and reconsideration and withdrawal of the rejections thereunder are requested.

IV. THE REJECTIONS UNDER 35 U.S.C. §102 ARE OVERCOME

Claims 1-3, 5, 6 and 27 were rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Block *et al.*, 1996. The rejection is traversed.

As was stated in the Amendment filed on May 6, 2003, Block *et al.* describes only a fragment of the claimed molecule, whereas the instant application discloses the full-length clone for the first time. There is no evidence that the nucleic acid sequence of Block *et al.* encodes a protein with the function of a wheat starch synthase. In addition, a claim is anticipated only if each and every element set forth in the claim is found in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Claim 1, and dependent claims, are drawn to nucleic acid molecules having the sequence of SEQ ID NO:1 or encoding SEQ ID NO:2, with the function of a wheat starch synthase. Block *et al.* clearly cannot anticipate claim 1, as it discloses neither of these sequences, nor does it teach that the disclosed sequence has any function at all. The Office Action states, on page 8, that "Block teaches a wheat *Triticum aestivum* soluble starch synthase mRNA sequence, ... which is 100%

identical to base [sic] 718-2771 of SEQ ID No. 1. Since it is a wheat soluble starch synthase mRNA sequence, the protein encoded by said sequence would have wheat starch synthase activity." As was pointed out above, the coding sequence of SEQ ID NO:1 begins at nucleotide 280; therefore, there are 438 coding nucleotides missing from the sequence of Block *et al.*, which translates to 146 amino acids of SEQ ID NO:2 that are not present in the molecule of Block *et al.* Given that a substantial portion of the N-terminus is missing from the protein, there is no evidence at all that it would have any enzymatic function whatsoever.

Claims 1-6, 8, 9, 12, 14-16 and 27 were rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Block *et al.*, 1997. The rejection is traversed.

As discussed in the Amendment filed on May 6, 2003, Block *et al.* relates to soluble starch synthase II (SSII), which is an entirely different enzyme than that of the instant invention, SSI. The sequence of SSII is different from that of SEQ ID NO:2. Furthermore, Applicants restate their position above that there is no evidence in the cited reference, nor has the Examiner provided any other evidence, that the molecule of Block *et al.* has any biological function. This molecule is missing the first 85 amino acids of the protein of the instant invention. In addition, base 533 of SEQ ID NO:1 is in the middle of a codon, meaning that if one started translating at the first nucleotide of Block *et al.*, it would not even be in frame with the coding sequence of SEQ ID NO:1. The artisan is not taught by Block *et al.* where to start translating.

It is submitted that neither cited Block *et al.* references anticipates the pending claims. Subsequently, reconsideration and withdrawal of the §102 rejections are requested.

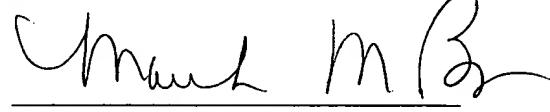
CONCLUSION

Applicants believe that the application is in condition for allowance, and favorable reconsideration of the application and prompt issuance of a Notice of Allowance are earnestly solicited. Alternatively, consideration and entry of this paper is requested, as it places this application into better condition for purposes of appeal.

Respectfully submitted,

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